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GLEANINGS

IN BEE CULTURE

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A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS. ILLUSTRATED SEMI-MONTHLY Published by THE A. I. ROOT CO. \$1.00 PER YEAR MEDINA, OHIO.

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FEB. 15, 1905.

No. 4



NEARLY every bee-keeper has some one queen that is clear ahead of all the rest. Breed from her exclusively. No matter if the editor did say that, page 128, it's worth saying again.

IT APPEARS that there is such a thing as control of fishing-grounds on public waters. There ought to be no greater difficulty as to control of bee-pasturage if bee-keepers should ever so desire.

AT BRUSSELS, in the Botanic Garden, plants of toad flax protected by gauze from visits of bees, etc., did not have a single flower fecundated, while others side by side, freely exposed, produced seed in abundance.

COMB-BUILDING, I always supposed, was at its best in hottest weather. Prof. Brunner, Argentine Republic, says the best temperature is between 64 and 74 degrees. Above 108 or below 61, little or no wax is secreted.

I FEEL SORRY for you chaps who live 'way down south. You can never experience the feeling of satisfaction one has in sitting in one's shirt-sleeves in a warm comfortable home while outside the mercury is shivering around in the region of 10 to 20 degrees below zero.

WHEN SCREWS are put into hot tallow, says J. A. Green, page 118, there will be a lively ebullition caused by the escape of the air in the wood. When boiling foundation splints in beeswax the escaping vapor appears to be several times the bulk of the splints, and hardly a fourth of the bulk could be air. Isn't it the moisture?

BEE-STINGS are having a boom in some of the foreign journals as an antipyretic. It is

claimed that a few stings suffice to cure intermittent fevers, even the most pernicious, more surely and promptly than quinine. I wonder how much there's in it. [Huber and I are making some experiments that are somewhat interesting. He goes into the bee-cellar and makes the bees sting him; then he turns them loose on me. Some time we will tell our readers something about it.—ED.]

PROF. BRUNNER, of Argentine Republic, South America, tells, in *Apiculteur*, about working for wax. As fast as the bees build combs and fill them, he melts them and feeds back the honey to build more, no matter how much they gather from the fields. It takes 6.8 pounds of honey to make one of wax, and the wax sells for a third more than its equivalent of honey. That will do with his inferior honey at less than 3 cents a pound; but at 30 cents a pound for wax it wouldn't pay, so long as the honey can be sold at 5 cents a pound.

THE IDEA given by Doolittle, page 133, that, when a frame of sealed honey is put in the middle of the brood-nest every week or ten days, the extra heat caused by removal of the honey guarantees against chilled brood is a new one. I'd like to know just how much there's in it. If a frame of honey be thrust into the middle of a brood-nest, there being just enough bees to cover the four frames of brood that are present, would there be no danger of chilling in a cold spell? How many frames of brood should there be, Bro. Doolittle, when you insert the first frame of honey?

PUNICS were not as bad here, Mr. Editor, as in Medina, page 135. The workers were half-bloods (virgin queens were mailed from England), and were champions at gluing and stinging, just as you say, but they were hustlers. They wouldn't do for comb honey, however, for they were the worst ever at making greasy-looking, watery combs. [We had the pure bloods, and they succeeded in driving both A. I. R. and myself away from them. They were but little if any better than the ordinary Cyprians. But one swal-

low does not make a summer, and perhaps it is not fair to conclude that all Punics are cross, simply because the progeny of the one queen we had was so.—ED.]

NOT OFTEN do I take the same pleasure in reading two controversial articles that I did in reading the Miller-Phillips controversy, page 123. The abiding good nature and kindness of spirit, with the keen arguments, make a delightful combination. Arthur C. is an iconoclast, and we need him. It's a good thing to take our bearings occasionally, even if we are on the right track. To change the figure, we're all too much given to following tradition. But, Arthur, my good fellow, I give you due notice that I'm going to stick to the tradition of the powers of scent in bees as handed down by the fathers—if I can. [This question is an interesting one, and I should be glad to hear from others of our subscribers who have had experience.—ED.]

SOME TIME AGO I said in a Straw, "Well, well! it seems like old times to have A. I. Root writing about bees again." I've no doubt that voiced the pleasurable sentiments of many a one, and the muse has inspired our good friend of the Golden State to give expression to the same sentiment in better form in the accompanying verse:

Uncle Amos has come back,
Writing bee-talk and all that,

Just the same as ever;
Uncle, he, to most of us—
Wasn't it his talk and fuss
Gave us first the fever?

Langstroth will as "Father" stand
To the bee-craft of the land—
We forget him never;
But there's no man can or will,
As an "Uncle," fill the bill,
Only Amos, ever.

Can't you hear him just exclaim
At a handle to his name,
Not for him a title!
Well, now, "Uncle" isn't new;
But it suits him, and is due,
Though it's poor requital.

Uncle Amos' heart is gold,
And his kindness can't be told—
All men are his brothers;
Loving, serving all his days,
Can we give him better praise
Than "he lives for others"?

Humble though our lot may be,
Yet it gives to you and me
Choice in fullest measure,
Of the good, the true, the pure,
Of the virtues that endure
And make heavenly treasure.

Santa Rosa, Cal.

F. D. WEBLEY.

"NAKED COLONIES," that is, four or more pounds of bees with a queen, but without combs, are frequently advertised in European journals, to be delivered middle of September and after, at about 25 cents a pound. [For near-by points it might be well for some of our queen-breeders to arrange to sell bees on a similar plan. We sold bees by the pound—that is, little bunches of bees, without any comb. For distances not exceeding 200 miles the results were fairly satisfactory. So many bees arrived dead for greater distances, making it necessary to make replacement once and sometimes

even twice, we gave up the business in disgust. A package to hold "naked colonies" will not weigh anything like a package large enough to carry the same number of bees on combs of honey. For example, one pound of bees on a comb in the lightest kind of package weighs about 4 pounds. The same number of bees in a wire-cloth cage with blocks of Good candy (sugar and honey mixed into a stiff dough) weigh only about 1½ lbs. For short distances the shipment of combless bees works very satisfactorily, and saves the heavy express charges; for bees have to go at a rate and a half when sent as express matter.—ED.]

NO WONDER, Mr. Editor, you and Mr. Doolittle don't entirely agree about outdoor feeding. He's talking about feeding needy colonies in spring, while you're not, pp. 120, 132. Years ago I did much open-air feeding; and while I've given it up because I don't want to feed other people's bees, I don't find the objections some do. I don't believe sugar syrup will start robbing any more than nectar of flowers. That the strong colonies get the lion's share is rather an advantage. Except for the possible stimulus, I'd just as soon the little fellows wouldn't get a drop. They can have combs from the big ones. The greatest danger is feeding in bad weather. You may think I'm radical about robbing, but remember I'm talking about what I know after wholesale experience feeding sugar outdoors. The greenest tyro can't start robbing with outdoor sugar-feeding so long as he keeps it up. Same with nectar. [I do not think you are radical at all; but the greenest tyro should know enough to feed the syrup thin, but not so thin as to sour, and give them enough to keep them fairly busy. The bees after a while seem to learn the times when the feed is put out and about when it will be gone. Another thing about it is, there are always a few stray robbers that will follow the smoker about when there is nothing to be gathered. This outdoor feeding draws them away and gives one a chance to open the hives—something he can not do with any degree of convenience during a dearth of honey when no outdoor feed is given. Yes, sir; we consider this way of starting up an artificial honey-flow a great boon to the queen-breeder. Every one who has had much to do with raising queens knows that, during a dearth of honey, bees will be inclined to destroy cells, refuse to start others, virgins will be missing, and the bees are otherwise ill-tempered and out of sorts; and, presto! what a change takes place when feeding outdoors begins! We have bought up now all the bees in our vicinity; and if any one puts any down here we will try to make arrangements so they will pay for what their bees take. During an average dearth of honey colonies would lose in stores; if they gain, as well as hold their own, then these "outsiders" ought to pay pro rata for what they get, and most of them would be glad to do so. Perhaps some would think outdoor feeding is of no benefit except to the queen-breeder. If there are

no neighbors' bees it is altogether the easiest and cheapest way to do it; and I suspect that syrup fed very thin, and carried through the air a distance, is more thoroughly ripened than the same amount of sweet of the same dilution given to the bees in the hive direct. This should be said, however, that there is possibly and probably a loss in bees owing to the hard labor of struggling against each other in their mad haste gathering the syrup and carrying it home. Just how much this may be I do not know. — Ed.]



The bees at home began this season in December on mistletoe, which is very abundant.

The weather was warm this winter, and bees flew nearly every day up to Jan. 10, when a cold spell came, lasting several days.

Bulk comb, extracted, and section honey are the three kinds produced in Texas, the most of it bulk comb honey with the greatest profit.

Heavy rains have fallen, and prospects are good. The up-to-the-times bee-keeper is making ready for a honey-flow while the other kind still has plenty of time.

What a difference! Snow and ice here in the North; at home, in the South, my bees are working busily on mistletoe, which is still in bloom, and agherites (*Berberis trifoliatum*), one of our best early bloomers, is coming in to stimulate early brood-rearing.

Texas has eight bee-keepers' associations, and there is something doing. They are now pulling hard before the legislature now in session, for a pure honey-law, and for an amendment to the foul-brood law, providing for an appropriation of \$1000 annually for carrying out the work.

The Washington State Bee-keepers' Association, according to its convention report in the *American Bee Journal*, has appointed a committee to seek the co-operation of the bee-keepers' associations of the States of Oregon, Idaho, and California, such committee to make a grand display of honey, bees, and by-products at the Lewis and Clark Exposition, to prepare literature and circulate it, and see to it that a booth is arranged

at which the public shall be feasted on honey, hot waffles, etc. There is nothing like organized effort, push, and advertising.

The botanical name of "catsclaw" is *Acacia greggii*, A. Gray; and of "guajilla," *Acacia berlandieri*, Beuth. These names have been asked for recently. They are two of our leading honey-yielders of Southwest Texas, and are both shrubs or shrubby trees belonging to the acacia.

Three times during the fall and this winter have I been guilty of letting the manager of my Texas apiaries jog my memory about ordering our necessary supplies early; and when he wrote me that I'd better order them right away if I expected him to produce any honey for me, they were ordered. Of course, being away from home and other matters accounted for the delay. A card now tells me that the supplies were just received; heavy rains had set in, and nothing to do but to fix them up for the honey-flow.

In consequence of an editorial by the editor of GLEANINGS in the Jan. 1st issue, relative to Southwest Texas as a bee country, many letters asking for more information have come to me, and I should like to say that it has been impossible for me to answer them properly on account of my school work and other duties. Some time soon I shall prepare for this department such information as has been asked for, together with a map of Southwest Texas showing the location of counties, cities, and towns, and the railroads in this section. This will then serve as an answer to all of the letters.

How would these be for get-rich-quick schemes? I have had these in mind for several years, but could not carry them out myself, so here they are:

One is, to keep bees in Texas for the early honey-flows, which last until June, then move to Colorado and catch the alfalfa flow there. The bees are to be returned to Texas to winter them for early flows the following season.

Another is, to run bees in Texas during the summer, and then spend the winter with bees in Cuba while the honey season is on; come back to this country at the end of the season there, and work the Texas bees again next summer.

By following one method the bee-keeper could keep cool all the time, and by the other he could keep warm year in and year out. This would be working bees the year round provided the bees wouldn't work the bee-keeper.

MOVING BEES SHORT DISTANCES.

To move an apiary of bees only a few hundred rods has been a serious problem with us during some of our winters. The bees flying more or less all the time will return

to the old location when moved. Several experiments in moving bees to different parts of the apiary, and distances from a few yards to several hundred rods, were quite successful early last spring. From hives moved with open entrances the bees returned badly. Others were closed with wire cloth, and some with the entrances stuffed with moss or green grass, early in the morning, and moved later in the day. The next day, about 11 A. M., the entrances were opened and the bees given a smoking on the new stands. Hardly any bees returned. Of the two I prefer the moss or grass for closing the entrances, especially at out-yards; not so much danger of bees trying to crowd out as with screens, and less liability of suffocation, as the bees can gnaw out. I tried this several times, and was well pleased. I moved 30 colonies about a hundred yards in this way in September two years ago. I did not get back there until seven months later, the following March, and found all good and well. They released themselves.

SPECIALTY VS. MIXED BEE-KEEPING.

In the January *Review* L. Stachelhausen gives us an article full of good points on bee-keeping as a specialty, in which he tells us that he did not make any money until he gave up every thing else. But there are, evidently, two sides to the question, and F. Strohschein defends his side well. He mixes bee-keeping with farming. Specialization brings more profit in other lines, and so it does in bee-keeping. Every thing is done on a large scale with short-cut methods, which result in cheaper production; therefore, if the locality is favorable, and the honey crop can be depended upon with certainty, the bee-keeper should specialize by all means.

But there is the other side of the question. Not everybody can be a specialist. Some bee-men have not the ability to expand, and the locality may not allow it. It may already be stocked, or the honey-flow may be uncertain. In that case it is best to mix something with bee-keeping, so that, if one fails, the other may be relied upon. If rightly managed, such bee-keeping will bring just as good returns as the other.

EXTRACTING HONEY BEFORE IT IS SEALED.

At the St. Louis convention this old question came up, to which General Manager France protested most emphatically. He gets his honey ripened by leaving it on the hives until it is all sealed, even if it takes all season. That is good practice, and just what I have often preached; but does it always work? Locality! In Texas, much of our honey is very thick when gathered, and little wax is secreted, so that often the bees do not get the combs sealed. The honey is soon ripe, and it is often necessary to extract before the combs are even two-thirds sealed. There are three reasons why it is best for us to extract before the combs are

sealed, sometimes: First, if the honey is allowed to remain in the old combs, especially catclaw and guajilla honey, it changes its color and flavor; second, some of our honey granulates soon after it is ripe, and it *must* be extracted whether sealed or not; third, sometimes the combs are not sealed at all; and if left on the hives during the winter the honey granulates. The writer had just such a mess a few winters ago.

BEE JOURNALS AND CONVENTIONS.

When a person has occasion to travel a great deal, if he comes in contact with bee-keepers as they are in their homes and in their apiaries he is very often alarmed at some of the things that are learned in this way. One of these is the lack of interest on the part of many of our bee-keepers in reading bee journals and attending bee-keepers' conventions. This is not only true of our smaller bee-keepers, but of larger ones who possess several hundred colonies.

In the first place, such persons are entirely ignorant of any thing pertaining to up-to-date and advanced bee-keeping, and they trudge along in old ruts that have long been abandoned by the progressive apiarist.

Secondly, and worse than the first, after they have produced a crop of honey by hard labor, they are not informed as to the honey market and the ruling prices. They know nothing about what other and more progressive bee-keepers are doing with their crop; and the fact in many cases is that they do not *want* to know, and consequently the crop is dumped upon the market at figures far below the market price. Every progressive bee-keeper knows the results that follow such carelessness.

I remember distinctly a case that happened at home several years ago. A farmer bee-keeper who had just launched out in the pursuit to get rich quick, as some of us were doing (?), after producing several thousand pounds of section honey took it to the merchant where he was accustomed to trade. He was very anxious to sell his honey, but the merchant was not so anxious to buy it. The bee-keeper did not know what price the comb honey ought to bring, and neither did the merchant. Extracted honey brought 7 cents at that time; but the merchant thought it much more trouble to extract the honey from the combs and fix it up ready for the table, so that comb honey ought to be cheaper. Finally both agreed upon this, and the bee-keeper took *five cents* in trade for the entire crop of as nice an article of section honey as I have seen on the average market.

The same quality of section honey was selling at 12½ cts. apiece at the leading groceries of the city, while the merchant who bought the section honey at that ridiculously low price retailed it at the same price as that of extracted honey. Imagine the results in that market!

Many will say that the above is an extreme case, which it is; but it is not the only one of its kind. There are, however,

thousands of bee-keepers who think they do not need or can not afford bee books or journals, and who never read them. When they dispose of their crop, however, it is done at a loss of from two to three cents a pound, which amounts to quite an item when the crop is large—large enough sometimes to pay for all the bee journals and books for many years.

My advice to these is to get up out of the old ruts and keep in line with the times. Subscribe for one or more bee journals, and get several books on the subject, and then study them well, and follow out in your work what is learned from your reading. The cost of the original investment will be small when compared with the profits that will be sure to result.

Next, attend the bee-keepers' conventions. They are of the utmost importance, as much is learned at such meetings that is not found elsewhere. By rubbing up against some of the better bee-keepers the otherwise square corners soon round off and thus make a better bee-keeper and a better fellow-man of a person, much more valuable to the whole fraternity.



In the *British Bee Journal* for Jan. 19 a writer comes to the defense of the black bees against the usual charges laid against them. He utterly denies that the first charge against them, that of bad temper, has any foundation in fact. As to their not being prolific, he dissents mildly. He says, "I grant at once they are not so prolific in the height of the season as the best specimens of Italians. But give me my choice of, say, fifty queens of either race, unselected, and I have no hesitation in saying that I would vote for the natives." As to blacks not storing so late in the season as the Italians, he says his experience is just the other way. As to their inability to resist disease as well as the Italians, he makes a claim that is so peculiar, in the face of other testimony, especially of what Samuel Simmins says in this issue, p. 178, that I quote a few lines:

Of all the cases of foul brood I have ever encountered, nine out of ten, I think, were directly traceable to the foreign element, and I almost subscribe to the sentiment expressed by a prominent contributor to our pages some years ago when he wrote: "Since we began importing we have had foul brood; before we began importing we had it not." To the statement that natives are "helpless" in the face of this disease I absolutely demur. It generally, on the contrary, takes from two to four times as long to kill out a black lot as it does an Italian colony. The latter, frequently in a single season, assumes it in the form of a "galloping consumption." If it catches the infection one season in a mild form, the very prolificness of the queen proves its

undoing, because each contaminated occupied shell becomes a center of contagion, disseminating the spores over the surrounding area until no single egg laid by the queen results in a metamorphosis evolving a bee fit to take on its shoulders the active duties of a healthy existence.

Is this a matter of locality?

A month ago I gave a clipping from a Cleveland paper setting forth as wonders what bee-keepers have practiced for many years. An explanation was given, but the editor made no reply. The same week, however, the following appeared in the same journal. It shows plainly that, after a subject has been discussed a good while in the parlor, it finds its way eventually to the servants' hall. It reads:

A bee that works only at night is found in the jungles of India. It is an unusually large insect. The combs are often six feet, and from four inches to six inches thick.

Somebody has heard of the giant bee, of India, and is palming off the above on the public. Just think of cells two to three inches deep! What the "six feet" refers to is not known. How much would such a comb weigh when filled? What would hold or support it?

Right on the track of the above comes the following, which is too good to lose:

Alonzo Murphy, a farmer living near Pochuck, while digging a ditch through some black dirt on his place recently, ran across the trunk of a tree about four feet below the surface. The trunk was in a fine state of preservation. The log was about two feet in diameter, and hollow. In the hollow space Mr. Murphy found a large quantity of honey which was in a good state of preservation as was the tree-trunk. There was enough of it to supply himself and neighborhood for the winter. Prof. E. J. Ferguson says the honey has been there over 9000 years. He arrives at this estimate by the depth of the deposit of soil over the log.

There is no such place as Pochuck in the Postal Guide. Don't scold commission men any more for putting honey in a cellar for a week when it can be kept, like "Massa," "in the cold, cold ground," for 9000 years. I should think such honey would "supply" a neighborhood a good while. The skill of Mr. Ferguson in deciding on the age of the honey is quite on a par with that of some scientists in giving the date of the death of the gentleman who left his skull at the bottom of a drift unknown ages before Adam. The Indians have always claimed there were no bees on this continent before the time of Columbus. They called the bee the "white man's fly."

But the great point is, whither are we drifting when the masses get information from such sources? I am glad to see that Mr. York has been calling attention to this matter.

A British pamphlet on the West Indies says there is an opening in Jamaica for bee-farming, and that one with practically no knowledge of bees could start a hundred colonies, with a little assistance from a bee-man on the spot. A writer in the *B. B. J.* wisely warns one first to get experience and then a teacher, and then make sure of that uncertain factor, a market, for his honey.



GOOD rains are being reported for Southern California. Let 'em come—the more the better.

THE bee-keepers of Michigan are planning for a big affair at their annual State convention, held this year at Grand Rapids, Feb. 23, 24. There are to be exhibitions of both comb and extracted honey, for which liberal prizes are offered by several different supply-dealers and manufacturers, as well as by the editors of some of the bee journals. The National Biscuit Co. will also make a display of their goods that are made with honey. See Convention Notices.

JUST as we go to press we have received the announcement of the death of Mr. Geo. W. Brodbeck, of Los Angeles, Cal., Secretary of the National Bee-keepers' Association. He died on Monday, Feb. 6. No other particulars have been received. Mr. B. was a lovable man, and his death will be mourned by his fellow bee-keepers. It will be remembered that, at the last election, the votes were all to be sent to Mr. Brodbeck, the Secretary. As no announcement had been made of the result, many were beginning to wonder what was the trouble. His sickness and death probably explain.

THE ADVANTAGE OF CLOSING THE ENTRANCES OF OUTDOOR-WINTERED BEES.

I HAVE just been looking at some outdoor-wintered bees at one of our outyards, and found them in splendid condition. The temperature was about 10 above at the time of the examination. The entrances were all covered with snow, so that no cold air could be blown in and out. What was the result? The bees were fairly well spread out over the frames in many cases, for the heat of the cluster was sufficient to make the compartment reasonably warm, so they did not have to draw up in the usual small compact masses. Heretofore when we examined our outdoor-wintered bees I have noted that they were drawn up into a mass not much larger than a good-sized snowball, because the heat of the cluster would escape at the open entrance. But this winter we are covering our outdoor entrances with snow or straw to confine the heat *and yet allow a sufficient circulation of fresh air.* Both the snow and the straw confine the bees; then when we have a nice day for thawing, the snow is melted, and the straw is pulled away to give the necessary flight.

I would urge our subscribers to try this entrance-closing for their outdoor bees, and see if they do not get better results than by

the old plan of leaving the entrances open the full width of the hive. Of course, it is necessary that the dead bees be raked out on warm days to prevent their clogging the entrance, and always see that it is not hermetically sealed with ice. Loose straw around the entrance shuts out the light and allows of ventilation, but *prevents drafts of cold air.*

Coggshall put me on the track of this when he wrote some time ago of the value of strewing loose sawdust over each entrance in early spring to prevent the chilling of brood on cool days. The bees can easily push the sawdust out of the way when it is warm enough for them to fly, so there will be no danger of suffocation or imprisonment.

HATCHING CHICKENS OVER A COLONY OF BEES.

THIS thing has been done, and it has been reported and discussed on our pages several times in years past. Now, although I have never made the experiment I feel sure that, were we to make use of the animal heat generated by a strong colony of bees for some purpose besides hatching *their own* brood, it would be detrimental to the colony more or less. In other words, if we hatch chickens by the heat generated by the cluster of bees we can not hatch out young bees with the same heat; and I think the young bees will be of more importance to the general bee-keeper than the chickens. Will the friends who have had experience please let us know about it? It keeps popping up every little while in the agricultural papers; and a bee-keeper in Ashtabula Co., Ohio, is credited with having said that a colony of bees will hatch every hen's egg that is fertile, without any care or attention whatever. One reason why I am doubtful about the matter is that I have seen so many colonies injured or killed outright in trying to put a feeder above the cluster in March or April weather, and have the bees keep the feeder warm enough. The same thing is true in a less degree with lumps of candy put right over the cluster. If your lump of candy is very large, and severe weather comes on, the heat that escapes around the candy, or the heat that is absorbed in warming up the lump of candy, may prove the ruin of the colony unless it is a very strong one. Keeping twenty eggs up to incubator heat, as the above writer claims, would be a pretty severe test on almost any hive of bees unless it were a *tremendously* strong one.—A. I. R.

ONE VERY IMPORTANT ESSENTIAL FOR EVERY COLONY OF BEES.

IT has often been remarked, friends—in fact, I think it is one of father Langstroth's axioms in bee culture—that there can be no real prosperity in a colony without a constant accession of young blood; and in the bee-hive there should be young bees hatching out every day. I do not suppose our beloved President Roosevelt knows much con-

cerning bee culture; but he has at different times put strong emphasis on the fact that the perpetuity of our nation depends on homes where little prattlers come in at intervals, but not too far apart. And this preface prepares the way for me to say that the Home of the Honey-bees is now rejoicing over the advent of a new member of The A. I. Root Co., who was born on Sunday morning, Feb. 5. There are now six grandchildren, five of them boys. The latest, just five days old this morning, belongs to E. R. Root. I can not give you his name, for just now it is an unsettled topic, although it is being very freely discussed by all the members of Rootville.—A. I. R.

THE ROOT COMPANY'S BEE-CELLAR UNDER
THE MACHINE-SHOP; VENTILATION AND
MIDWINTER FLIGHTS.

ON p. 183 of this issue we present a view of the Root Co.'s bee-cellar—a room within a room—under the machine-shop, where we have secured such splendid results in wintering during the last three or four winters. The picture in question was taken by means of an arc light, and shows very clearly the interior, the two walls, the automatic sprinkler-pipes to put out fires, the ground floor, and last but not least the tiers of hives on either side. The further end is screened off with curtaining. The end toward the observer is a wooden partition. Our Mr. Titoff, who put the bees in the cellar, did not understand that I desired to have the deep entrances for indoor wintering. The consequence is, most colonies went in just as they came from outdoors, with the ordinary small entrance. The bees getting too warm had flown out, and a good many more than I like to see were on the cellar bottom—rather more than usual. But there are apparently more bees on the floor as indicated by the photo than there really are. But even with the small entrances, covers sealed down, bees are very quiet, and are doing nicely; but if we shut up this apartment tight there will soon be a roar, a buzzing, from here and there numerous bees flying out. Opening the end door, letting in fresh air from the cellar proper surrounding this one room, very soon quiets the bees, and all is quiet.

As I have explained heretofore, this long room (8×50 feet) is one of four running lengthwise through the basement, 36×96, 10 feet high. The bees are in one of the central compartments, occupying only about half of that one, the other end being used for the storage of castaway machinery. The floor (or ceiling, rather, in this case) is made up of six-inch plank standing edgewise and nailed to each other. On top of this, or what makes up the machine-shop floor proper, is an ordinary hard-wood matched floor $\frac{3}{4}$ inch thick, thus making in all 7 in. of ceiling. This is all that shuts off the roar and rumble of the machinery above.

Lately we have opened the end door of this cellar, and kept it open, screened the

windows from outdoors in the larger room, and allowed the air from the outer cellar to circulate freely through this apartment in which the bees are confined. A large screen is placed in front of the opening to shut off what few rays of light may enter. So well have bees been doing in this cellar that by accident the end door has been left open a number of times, letting in strong daylight from a window about ten feet away, just opposite the doorway. It did not appear to disturb them much, and this is what suggested keeping the door open all the time.

When the photo was taken, the arc light was turned on in this room for several minutes, taking several different exposures. In all this time there were perhaps half a dozen bees that flew toward the arc, got their wings singed, and dropped down.

I just wish that any one who thinks ventilation is not necessary would come and note the result of no ventilation and plenty of it on this lot of bees as shown in the illustration on p. 183. Then I wish he would come, too, perhaps a week *before* the late winter flight, then come again *after* they have had their flight. If he does not acknowledge that the bees are more contented and quiet, I will make him a present of a silk hat.

In this connection I might say that we have quite a number of reports from those who have tried these midwinter flights, some of them from old veterans, and all, with one or two exceptions, are very enthusiastic in its praise.

I would call attention to the article by C. Davenport, in this issue, on p. 180, on this subject. Mr. D. is one of the old veterans, and one of our very best correspondents. He has had a large experience; and when he says these winter flights have paid him, some of the doubting Thomases may well stop and think. But there is a right way and a wrong way to give these flights, as Mr. Davenport explains.

THE ACKLINS AT ST. PAUL.

NEARLY every locality, as I have before explained, has its predominating moving spirit in beedom. St. Paul, or rather, I should say, the "Twin Cities," have their representatives in the personages of Mr. H. G. Acklin and wife, as well as little Ethel, who has come to be known as the "little sweet singer" at several of our late National conventions. The Acklins, besides being prominently connected with the supply business, own a number of large apiaries, are extensive producers of honey, and rear queens in a wholesale way. Mrs. Acklin is quite as active as her husband, and either one of them can apparently take charge of the business in the absence of the other. Mr. Acklin himself is a man of large physique, commanding presence, genial, and in every way a personality whom one loves to know. Mrs. Acklin is a full complement of her husband, and always radiant with enthusiasm. She has been having poor health of late, and so the trio have gone south to recuperate, in order that they may better

undertake the heavy duties incumbent on them on account of their rapidly growing business this coming spring and summer.*

They have been prominent in Association work; and in the general work of popularizing bee-keeping in their own locality, no one has done more. They have given special attention to the matter of preparing honey exhibits at their local fairs, and, I understand, have carried off a good many prizes.

As already stated, little Ethel has often been spoken of as the "sweet singer" at some of our late National conventions, and, indeed, she is; for her voice, for one so young (eleven years), is quite remarkable. Her words ring out with a birdlike clearness and distinctness; and when she sings some of those familiar songs, such as—

Oh! I ish von of dose habby bee-mans—
I don't got to vork any more,

every word is very clearly understood, even through the German dialect. She is always followed with a roar of encore, and it keeps up until she responds with another song.

NOTES FROM THE NEW YORK STATE AND COUNTY CONVENTIONS.

THE local bee-keepers' conventions in New York State from Jan. 9 to 19 were among the best I ever attended. That State has a large number of now famous men, and it is a real pleasure to meet them. Then in many of these counties there is a surprising number of wide-awake men who, although perhaps not quite so well known, are none the less energetic. There is prosperity where bee-keepers have enough interest in their work to form county associations and to hold county conventions.

The bee-keepers of St. Lawrence County got together and organized a society of their own, with a good membership to begin on. There are some extensive producers in that county, and great things may be expected of them. The Jefferson County Association alone added 14 new members to their list. This gives an idea of the interest shown by these enterprising York State men.

It is impossible for me to give any thing like a satisfactory report of the whole series, and it would be next to impossible to give even the more important points; but there are some things that went down in my notebook, and I give them here, hoping they may be of interest.

The practice of sending honey to commission men was severely condemned in several of the meetings. Some commission men are so ignorant that they keep comb honey in cold storage, or in a dark cold cellar, and then have to sell at a low price, of course. W. F. Marks strongly urges straight cash sales, saying that, if *every man* would insist upon cash for his honey, this old story of damaged goods or of poor market, with consequently delayed payment, would soon disappear.

A honey-producers' exchange was discussed, which should be formed for the pur-

pose of establishing and maintaining the price of the different grades of honey. This was generally considered to be a good thing if every producer could be induced to join such an organization.

The question-box proved its value at every convention. Sometimes a beginner, feeling that he had had so little experience, would be more inclined to listen than to talk; but the question-box opened the way for every man to give his ideas, and this is the life of any convention.

It is a pity that all of the papers read at these conventions could not be published; but this would be impossible in this brief report. Two of them, however, contain so many good points that they will be given in our next issue in full.

Both during the meetings and in talking with different men afterward, I picked up a good many ideas which are given here for what they are worth.

Asbestos-tan is a good material for bee-gloves.—L. F. WAHL.

A flat or oval handle beats a round one all to pieces for an uncapping-knife.—W. L. COGSHALL.

A good paste for sticking labels on tin is: Pulverized borax, 2 oz.; flake gum shellac, 4 ounces. Dissolve in one quart of boiling water.—N. E. FRANCE.

In wintering bees outdoors, should we not keep the wind from blowing directly in at the entrance?—F. H. CYRENIUS.

A cloth damp with carbolio acid will hustle bees out of a super.

If hives are put on a north slope, the sun will not lure the bees from the entrance before it is warm enough for them to fly.—A. A. FRENCH.

Old pieces of Brussels carpet will outlast any other kind used, as a covering over the enamel cloth on the frames.—W. L. COGSHALL.

"Keep close to nature's ways."—A. A. FRENCH.

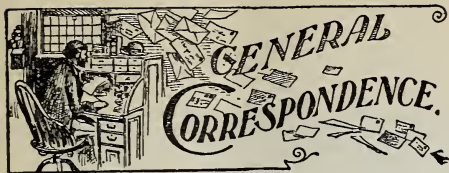
Just before swarming time, nail a few cedar or spruce limbs to a stake, and set these loosely in holes in the ground at convenient places about the apiary. Swarms will generally alight on these, and then, without any sawing or climbing, the limb containing the cluster may be carried away.—FRED H. LOUCKS.

Avoid trouble with your neighbors, and so save the money of the National Association.—N. E. FRANCE.

H. S. Ferry, the well-known manufacturer of soda-water machinery, is also an extensive bee-keeper. He attended most of these conventions, showing as much interest as a man who keeps bees as a sole occupation. He showed several ideas of his own invention which were interesting and valuable.

N. E. France was engaged by the State to address each of these meetings. His talks were full of common sense, and his word was accepted as final authority. Certainly the National Association ought to be proud of its General Manager.—H. H. ROOT.

* Mr. A. has since returned.



THE QUESTION OF OVERSTOCKING.

Has it been Exploited too Much in Our Late
Bee Literature! Blind Leaders of
the Blind.

BY J. E. CHAMBERS.

Mr. Root:—I notice in your footnote to my article on page 22 you seem to be under the erroneous impression that I intended to criticise your editorial position on the question of overstocking; but if so, I beg to say that such was not my intention. That article was intended more in the nature of a warning to bee-keepers in general and to beginners in particular, and not as a criticism leveled at you. However, I wish to state that there are several bee journals circulating among the very same men who read GLEANINGS, and I very much fear that the editors of some of these journals are indorsing views regarding overstocking that ultimately must lead to harm and serious loss. Furthermore, you know well enough that many small bee-keepers and beginners are now looking to the big fellows who do the writing, for correct advice respecting these perplexing questions. They expect, and have a right to, that those who have made a study of the pursuit, and who pose as worthy and trustworthy advisers, should know something definite about the subjects they write on; and when one of these big guns goes off half primed, and with a loud report, sounding to the uttermost limits of the earth—says put 750 colonies in one yard, and don't have any outyards, there is sure to be an echo from some admiring small gun, with the result that somebody gets hurt, and, of course, it is generally the admiring small gun.

Now, be it understood once for all that I am not saying that the big gun has misstated his achievements; but I do say that, in all such cases, there were exceptional conditions, such as the admiring small gun can not command; and this fact the big gun has probably never taken into consideration. It was just this fact that induced me to say that a warning from you was needed—not that I think you have been remiss in your duty as an editor. However, I want to call your attention to the article of Mr. Louis C. Koehlers. From the heading of that article one would be apt to think that his yield of 15,000 pounds was a great crop, when in truth it is only 59½ pounds per colony. But he has 252 colonies in one apiary. Of course, I do not say that the large number of colonies in his yard was in any way responsible for this less

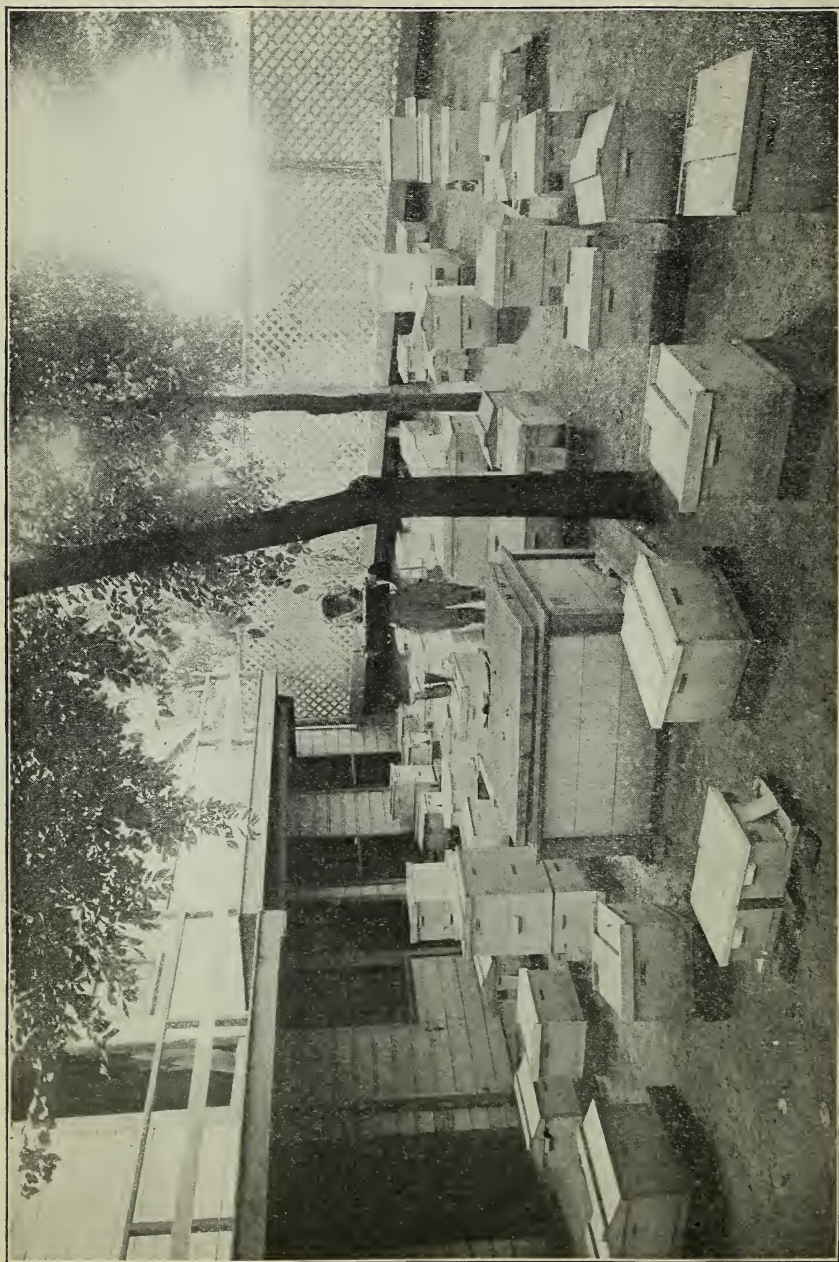
than average yield of extracted honey; but unless the season was a poor one it would seem that it must have cut some figure. You will find the article on page 439, May 1. I have not found any note of warning under this article, but it may be that you have overlooked it—not that I think all large apiaries should be criticised, for, as I said before, there are exceptional localities where from 250 to 700 may be kept; but even these extra-fine locations will probably fail to yield any surplus in bad seasons. It is just such exceptional cases as these that lead the beginner astray; and unless some one points out the danger, what will the ending be? And, again, I will say that it seems to me you have entirely overlooked the fact that these advocates of large apiaries do not admit that overstocking is at all possible, and thus their position stands on books as a continual menace to sound conservative bee-keeping. It is no answer to say that every man has a right to his opinion, for I grant that as readily as any one; but that right ought to be no more than a personal one, and should not, I think, entitle him to consideration when his doctrine is unsound and hurtful to the business or pursuit to which he may belong; and this does not mean that I think such articles should be excluded from publication, or that the authors should be sat down on. But it should be made perfectly plain in every instance that such teaching is not considered sound, and that, for the majority of bee-keepers, it would not be profitable or safe, and that none try it on a very extensive scale.

Again, I notice on page 695, July 15, 1904, an article on overstocking and priority rights, that, while not coming at this manner of overstocking in a direct way, yet argues the legal rights of any one to force overstocking by going into fields already fully stocked, and asserting his right to keep bees even though it results in ruining those already there. Such writing I consider to be dangerous in its tendency, no matter what may be the intentions of its author; yet I find no word of protest from you, Mr. Editor. I think it a mistake to argue the purely legal aspect of such things, to the exclusion of the higher moral side. Just imagine what would be our standing and position if we were forced to adopt that standard by which to regulate our conduct toward each other, and if there never was to be any respect for a right that was not a legal one. Why, we should perish from off the earth.

Now, I do not know whether I have succeeded in making my ideas clear to your mind or not; but you will now understand I think that my intentions were good, and free from any selfish interest, and directed solely in behalf of the interest of the pursuit.

NO NEED OF POLLEN IN SHALLOW BROOD-CHAMBERS.

The third paragraph of your footnote in regard to pollen in sections is a rather puzzling question. You say that even Dr. Miller finds the Danzenbaker hive to favor the storing of pollen in the sections. Of course,



H. G. ACKLIN'S HOME APIARY, ST. PAUL, MINN. SEE EDITORIAL.

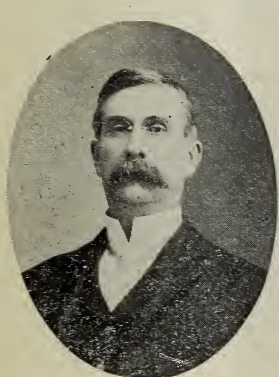
—By courtesy of the *American Bee Journal*.

I am not familiar with the practice of Dr. Miller; but in spite of the fact that he is, from his long experience, entitled to be considered an expert, I yet firmly believe his practice to blame for the pollen trouble, for I use a shallower hive than the Danzenbaker, and my locality is one in which every important honey-plant is a composite; but in spite of this I am not troubled in the least. However, I once made some exhaustive experiments to determine the conditions under which bees are disposed to put pollen in sections, and here is the result: A swarm hived on the old stand, and sheets of foundation used in brood-chamber, with no empty comb, and a super with drawn comb in which the colony had been storing put back on the swarm, always puts some pollen in the sections during the first day or two. A swarm, either forced or natural, hived in a shallow hive, on starters, with full sheets in the sections, sometimes stores pollen in the sections, though not often. If a swarm of any kind

as honey; but if the first work is begun below, all will go right.

Vigo, Texas.

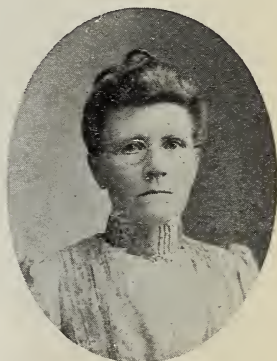
[My travels over the country have shown me very conclusively that overstocking almost invariably cuts down the yield per colony, and I have said so. There are many locations in Colorado, Texas, Idaho, and California where bee-keepers have rushed in and put in more bees, with the result that the yield per colony has been cut down in many cases over a half. I have been in localities, however (but only a few), where more than 200 colonies could be kept to advantage. I was in one place where I saw 500 all in one yard, giving a large annual yield; but in all that I have written on this question I have always cautioned against the danger of getting too many bees in one place; and in nearly every instance I have said the localities were overstocked, and that other bee-keepers going into these places would be liable to get a cold reception.



H. G. ACKLIN.



ETHEL ACKLIN.



MRS. H. ACKLIN.

By courtesy of the American Bee Journal.

is hived on solid combs of brood or honey, and a super containing some drawn comb is put on top, pollen is often stored in the sections, with half or full sheets in the brood-chamber, and starters in the sections. Bees seldom put pollen in sections. My practice now is to hive on foundation except the two outside and one center comb. These are clean, freshly built combs. Full sheets are always used in the sections. Under such conditions no pollen ever goes into the sections. I do not believe there is a worse mistake in the whole line of bee-keeping than this belief that pollen-storing in sections is due solely to the depth of the hive; for if that were true my sections would have only pollen stored in them, for I use a very shallow hive.

This whole question, I think, hinges on the way in which a colony is started. If the main force of bees rush above at once, the queen is apt to follow, and the first work will be storing in the sections, pollen as well

I do not add a footnote to all communications that appear in GLEANINGS. Some of them are sufficient unto themselves. Others are on topics that are as new to me as they are to our readers. But there is another class of articles that I admit without a footnote, even though they take a position different from what I have frequently taken in these columns. If I should attempt to weaken or nullify by a footnote the statement of every correspondent who differed with me I should be wasting space and make the journal reflect only the opinion of the editor. I allow a good many statements to go unchallenged, for I assume our readers can think for themselves, and in this case it is obviously better for some other correspondent to challenge the statement in question. Primarily this journal is a gleaner. It gleans heads of grain from many fields, and sometimes it gathers chaff and screenings, although we endeavor to give nothing but heads of grain.—Ed.]

SELLING PROBLEMS.

Is it Practicable to Get all the Pollen out of the Honey?

BY C. A. HATCH.

Mr. Root:—I send you a copy of a letter which I have lately received, which shows up some of the troubles of a honey-seller, and proves that all is not sunshine and success, even if you do sell your own crop. Allow me to say in self-defense, that in my experience I have received but one other serious complaint.

COPY OF LETTER.

Mr. Hatch:—The last shipment of honey was very slow in making its appearance, and that has been the case with all previous ones except when shipped from Twin Bluff; that one came in nine days; so if it is all the same to you I should much prefer you to ship from there.

You evidently forgot to put wire around the cases in the last shipment, and in the lot (ten cases) there was not one whole one when they got here. Some of them were badly damaged, causing them to leak, and waste the honey when melting, but did not show enough to put in a bill against the railroad. For shipping this distance, each case should have two wires put on, equally distant from the center and ends.

There is another matter I am sorry to have to mention. The quality of the clover honey is not what it should be and has been heretofore. It is darker in color, and the fine flavor is lacking; also some of the cases are full of black specks, and it is a hard job to get them all out. Some are light, and come to the top of the honey, but some stay in the honey in spite of all we can do. The basswood is A No. 1, as the clover always has been heretofore. I have always bragged that the quality was uniformly good in each shipment; but this shipment takes the wind out of me.

Now, mind you, Mr. Hatch, I do not mean to imply that this has been intentional on your part, but I am stating facts just as they are, and the effect is just the same as if you meant it to be so.

I want some more honey if you can guarantee as fine quality as in the three first shipments. C. C. M.

P. S.—Since writing the above I have cut open a can and found it was rusted through so it leaked when melting.

Colby, Kan.

RAILROAD AT FAULT.

You will see that for the two first complaints, 1, slowness of arrival; 2, cases broken, I am not at fault; for Twin Bluffs is a near-by station on the same road, and could possibly make no difference in time of delivery, and the broken cases are entirely owing to the handling of the "gentle" baggage-smashers.

WIRING CASES.

The lack of putting a wire around the case was a matter of forgetfulness on my part. But as he is the only one who ever requested it done, there is some excuse for forgetting it. To do this is a good thing, however, where tin cans in thin wooden cases are to be shipped long distances, and many transfers on the route. Honey is heavy, and freight-handlers are not paid for being careful, but to get the most done in a given time.

KEEPING UP QUALITY.

His next complaint as to quality was a "stumper," and is yet. I have only two apiaries, ten miles apart, and the honey of the two is as much alike as two peas, and the only explanation I can give is that one lot was overheated in melting, and thus

spoiled. I am sure none but best clover was sent, which shows, that whatever may happen to your product before it gets to the consumer, you are the one blamed.

SPECKS IN HONEY.

This is what he complains of next, and there is where he hits me square in the face, for honey full of black specks is an abomination. But how to get them all out is what I am unable to say—that is, with a reasonable amount of extra work. True, we could be sure all were out if all honey were melted and then run through a fine strainer while yet warm; but who wants to do this just to suit one in ten of his customers? I am not referring to dirt of any kind in honey, for that should be kept out at any cost, but to specks of pollen. My honey is taken from the extractor and run through a cheese-cloth strainer into a large tank holding about one ton; then after standing at least 12 hours it is skimmed and drawn off into new 60-lb. tin cans. If I make my strainer finer, the honey will not go through at all; and yet as it is, enough does go through and remain after skimming to show. I do not think it would show, but I think the small particles unite, one with the other, when the honey is melting, and so make large specks. I have tried gravity strainers, but with no better success. Can some one suggest a cheap, effective, and sure means of taking all pollen out of honey? But will the flavor remain the same if we do? Are not the fine particles of pollen what gives honey its special flavor?

My correspondent complains of a can being rusted through, and leaking when melted. This might come from having used an old can. I have been using some cans the second time when I emptied and cleaned them myself, but I think from this on I will use no more.

Of course, in my reply to him I did not fail to thank him for his criticism, although it made me feel blue all the way through; for if there is one thing I am proud of it is the satisfaction of my customers; and, to repeat C. C. M.'s figure, it "knocked the wind out of me." But I mean good shall come from it; and if I can not hold this customer I shall try harder to hold the next one.

Richland Center, Wis.

ITALIANS AND FOUL BROOD.

Proof that the Yellow Race does Resist the Disease.

BY SAMUEL SIMMINS.

In GLEANINGS for Dec. 15 I notice the remarks made by yourself and Dr. C. C. Miller, p. 1144. From a very long experience I am convinced that Italians and also Carniolans are better able to keep disease at bay than the black (or German) variety. You suggest that it is probably because Italians are less inclined to rob. That must always be a factor in relation to the spreading of

the disease; but when I state that Italians and Carniolans are troubled less than black bees I desire it to be understood that they readily dispose of the plague; and when queens are introduced into apiaries of blacks where foul brood is prevalent, they will soon show a clean bill of health.

By a strange oversight my seventh proposition was omitted from the 1904 edition of "A Modern Bee-farm." It will be found in *Bee Chat* for November, 1899, page 50, as follows:

"Native bees are decidedly more subject to the disease of foul brood than either Carniolans or Italians; but the latter more readily respond to treatment when affected, and will quite frequently dispose of the malady without aid from the owner."

"Right here I place my hand upon the wavering balance of opinion as to the effect of various medicinal agents applied in combating the disease, as well as regarding the undoubted fact that colonies will at times recover, not only without such agents, but most certainly by treatment which aims at exterminating the complaint by causing the spores to germinate under conditions where they can not be reproduced. . . . The whole matter turns largely upon racial vitality and energy. . . . The different races of bees under treatment by persons making exactly opposite statements will be found to account largely for the apparent contradictions.

"On one occasion I bought a number of stocks from (I then found) an infected source. Half were native, the rest Italian. The former were diseased, but none of the Italians.

"In another instance I bought eight skeps of black bees. At the time, and even for several weeks after transferring, these bees appeared healthy. Presently one after the other showed signs of disease; and, though I gave medicated food, there was no disposing of the scattered foul cells until the queens were superseded by Carniolans and Italians. During the whole time these were the only stocks diseased in an apiary of foreign bees many times their number.

"At a bee-keepers' convention held in Melbourne, black bees were condemned as being subject to disease. I quote from the *Australian Bee Bulletin*:

'Mr. W. Symes said his earlier experience had been with black bees; but he found them subject to foul brood so much that he almost despaired of getting rid of it; but since he has introduced Italian bees the disease has gradually disappeared, and now has ceased to trouble him.'

"Mr. Bennett bore evidence to the superior qualities of the yellow bees in resisting disease, giving the result of some experiences in endeavoring to inoculate Italian bees by feeding them with honey taken from foul-brood colonies.

"It was agreed on all hands that the points of excellence in the matter of resisting disease were with the yellow race of bees, giving them, therefore, a superior place."

It would, of course, be idle to say that

these more prolific races do not and can not have the disease. Carniolans certainly come from a district where foul brood is unknown; not so Italians, for it is well known many Italian apiaries have suffered severely. This may be from degeneration where any particular strain is reared from the same stock year after year; but where Italians are procured from different sources, and recrossed with unrelated strains of the same race, there can be no doubt that this added vigor, together with their prolific qualities, assists them in repelling the plague.

Again, if one deliberately infects a colony of bees, nothing can prevent them from having the disease, no matter what the race; but here is the gist of the whole matter—the blacks do not attempt to subdue it: the others do—so much so that for a long time the inexperienced eye would detect nothing the matter with the combs; while a favorable season, or a little judicious assistance, would enable them to eradicate it entirely.

When bees are under the influence of a rousing activity, as is the case with a heavy honey-flow, disease makes no headway, and is frequently cured without further aid; and consequently, when treatment is to be carried out for curing at other times, the medicated food should be given rapidly, and the combs fed up solid when the honey season is over. This will be found the grand cure, raising as it does that energy and new vitality so necessary in throwing off disease. Here I have found izar the simplest and safest remedy, being non-poisonous, and even liked by the bees. It has been most effective in ridding many apiaries of foul brood where my instructions have been followed.

Heathfield, Sussex, Eng., Jan. 7.

[Mr. Simmins is the author of "A Modern Bee-farm," an English work of no ordinary merit. I have been trying to find time to give it a review in these columns, and hope to present it soon. The facts presented by Mr. Simmins, who has made foul brood a study, are interesting as well as significant. The other evidence already given, and yet to be presented, showing how the Italians are better able to resist foul brood and other diseases, scores one big point in favor of the yellow race. It is probable that the author of bee books have not made enough of this point.—ED.]

THE HERSHISER COMBINED HIVE-STAND AND BOTTOM-BOARD.

Some Misconceptions Corrected.

BY OREL L. HERSHISER.

Mr. Root.—Feeling certain that you wrote the footnote in reference to the Hershiser combined hive-stand and bottom-board, page 77, without a clear conception of its construction and adjustments, I arise to explain away your erroneous conclusions.

The trifling additional expense will be of

no consequence when the resultant advantages and profits from the use of the bottom-board are considered. The stand needs no expensive foundation. Four bricks or two pieces of scantling will answer. In wintering bees, stronger colonies and more of them in the spring; the convenience in placing the bees in the cellar and removing them therefrom; the ease and rapidity with which bees may be prepared for transportation to and from out-apiaries or for shipment long distances; the control of the bees in robbing; these and the many other considerations of convenience and economy, are the claims upon which this bottom-board and hive-stand is presented to the bee-keeping public.

The floor-board does not bind, nor become tight and immovable, because it is made enough narrower than the stand to allow of free movement. As stated under the description of Fig. 3, page 75, "it rests snugly against the shoulder formed by the upper inside rim F;" that is, it rests against the lower surface of the upper inside rim, and does not press against the sides of the stand. Painting the bottom-board will enable a closer fit, and make it last longer. There is no necessity for the floor-boards to be made with the grain running crosswise.

The edges of the floor-boards being beneath the lower surface of the upper inside rim, nearly half an inch out of reach of the bees, they could not possibly propolize its edges. At the line of contact, along the edges of the upper inside rim, the bees will undoubtedly propolize a little, the same as they do in the angle of the floor and sides of the ordinary bottom-board. But it is not a serious matter there any more than it is between the supers and bodies of hives where we all know how to manage it. When you prepare bees to be placed in the cellar you "go around with a pry, put it in the entrance, and break the propolis connections" (GLEANINGS, page 83). You need take no more pains than that in loosening the Hershiser bottom-board. If propolis ever gets under the upper inside rim, as it may if the bottom-board should not be returned to its exact former position, the yielding springs will adjust themselves to it, and the constant pressure will flatten it out, leaving the bottom-board in its normal position. There will be no annoyance from propolis as the result of adjusting the bottom-board to an intermediate position, when its sides can be reached by the bees, as it is only at such short times as periods of heavy honey-flow or in hiving swarms—times when little propolis is being gathered—that such adjustment is necessary. It is very easy to remove and scrape these bottom-boards if they need it.

My cellar contains 153 colonies of bees, all shut in the hives. There are no dead bees on the cellar floor except a few scattering ones from defective hives. There are very few dead bees on the floor-boards. Bees are in fine condition, and very quiet, and are passing the winter almost "without a murmur." These bees were closed in at the

out-apiaries about the first of December, when the temperature was below freezing, most of them hauled about $\frac{3}{4}$ mile, and some of them 4 miles, and placed directly in the cellar. The cellar was warmed up so the live bees on the floor-boards could crawl up into the cluster. Hence I conclude it is not bad practice to shut bees within the hive, provided it is properly constructed with that object in view.

Buffalo, N. Y.

[I will explain to our readers that, at the time I prepared the footnote, I did not have an actual sample of the bottom-board. My assertions were based on the drawings, which gave the impression that the floor-board reached clear across—came in actual contact with the sides, and would therefore be glued fast. The sample before me shows that such is not the case; in fact, the floor-board may be narrower by $\frac{1}{8}$ or $\frac{1}{4}$ inch, and still not materially interfere with its actual operation. The only objection that remains is that of expense. It may be possible to whittle this down to a point where the bee-keeper can afford to use it in connection with his hives. Some, like Mr. Hershiser, would feel that they must have it any way. There can be no denying the fact that, for moving bees and for wintering in the cellar, the device has features that are valuable. How far these would counterbalance the first cost it is hard to say.—ED.]

WINTER FLIGHTS FOR CELLARED BEES.

When Such Flights May be Given to Advantage.

BY C. DAVENPORT.

That Straw on page 12 in regard to mid-winter flights for cellar-wintered bees induces me to give some of my experience in the matter again, for I have practiced giving cellared bees a winter flight for a good many years. I wrote about and advocated this practice under certain conditions nine or ten years ago in the *American Bee Journal*. What I said in regard to the matter caused some comment at the time; but the general verdict or opinion was that these midwinter flights did more harm than good. Some claimed that, after being put back, the bees would not settle down into a dormant state again, but would remain restless and uneasy until put out in the spring if they lived that long. Others said that these winter flights would cause, or be very apt to cause, brood-rearing to be started, which would mean death to the colony before spring; or if brood-rearing was not started it was thought that the great excitement of a winter flight might weaken the vitality of the bees so that spring dwindling would result.

But time moves on, and opinions change; and as this subject has been given some prominence the past two winters or so it may be of interest for me to go over the subject again, for my experience in this

matter extends over a period of fifteen years or more. By this I do not mean that I have given all the colonies I winter in cellars a flight every winter; for if bees are wintering well, and remain in a quiet dormant state until time to set them out in the spring I do not believe a winter flight is necessary; in fact, I believe it may do more harm than good—not necessarily the flight itself, but the excitement and disturbance of getting the bees out and back in the cellar may draw more on their vitality than the longer confinement would. On the other hand, if, owing to poor stores or an unfavorable cellar, the bees begin to get restless and uneasy toward the latter part of winter my experience has been that a flight at about this time is a great benefit. I feel morally certain that a great number of colonies to which I have given a flight under such conditions, and which have come through the spring in good shape, and built up into strong colonies in time for the white-honey harvest, would have perished by spring dwindling if they had not been allowed to have a winter flight. I have often had large numbers of colonies that had dark fall honey, and in some cases more or less honey-dew for winter stores, get restless toward the latter part of winter, and begin to spot the hives. Such, when given a winter flight, always came through in much better shape every way than colonies in the same condition that were not given a flight.

But one thing in regard to winter flights that I learned by dear experience is that, after a colony has had a good flight, it should be put back the same day, or at least the next, or brood-rearing may be started. One year I set a large number out about the middle of January, and left them out about a week, as the weather continued so mild that they could fly every day. Over two-thirds of them started brood-rearing, and I lost nearly all of these, for they seemed to keep on trying to rear brood after being put back in the cellar, and most of them ran out of stores, and starved to death before it was time to set them out in the spring. I never knew a colony, though, to start brood-rearing if it was put back the same day, or early the next, before they commenced to fly.

Southern Minnesota.

[Our experience here at Medina confirms Mr. Davenport in every particular, so far as we have gone. We have always put our bees back the same day, as we would not dare to take our chances on having another favorable day. I can readily see, however, how a week of good weather might set the bees to rearing brood so as to sap materially the vitality of a colony at a time when it could ill afford to lose any strength.

I can not help believing that the conclusion arrived at a number of years ago, that there was *no* advantage in taking bees out of the cellar, was utterly erroneous. If they are suffering because of overcharged intestines, why would not positive relief be given if that

poisonous fecal matter could be discharged? Certainly it would.

If we get right down to it, I think we shall discover that the reason why the practice was given up was because of the nuisance or bother. Then is it not true that some who condemned it allowed the bees to stay out for a flight too long or selected days that were too cool? I have never advocated more than a few hours' flight on a *favorable* day, then putting the bees back in the cellar again the same day.—ED.]

WHAT MADE THEM GO OUT ?

Why Some Bee-keepers Succeed and Some Do Not.

BY C. E. WOODWARD.

I am asked every now and then why so many people go out of the bee business every year. In the first place, I do not admit the implied condition of affairs as stated in the question. They say to me that the bee business can not be a very profitable one or it must have a great many more unusual drawbacks than most other kinds of business. I do not believe the number of those who drop out of the bee business is any greater in proportion than in many other lines of trade in the mercantile world. It must be remembered that hundreds of people become interested in honey-producing and queen-breeding each year, and they represent all classes and characters of humanity, from the schoolboy to the aged invalid. Many of them have made failures in numerous callings of life, hence they are attracted to the bee business and think it a very easy one; and the result is, another failure to be recorded in the chapter of misfortune. Those who go into the bee business with this idea seldom succeed, because they are woefully ignorant in regard to the elements necessary to success, and are not willing to give the work the attention and money which it oftentimes needs.

Looking at the bee business from the view of dollars and cents, it should be borne in mind that capital and experience are necessary for success unless one is willing to start in a small way and is satisfied to wait till the business can be established on a paying basis, which can not be done in one season. I know of no other vocation in which those interested expect as great returns in so short a time, and with so little outlay, as with the honey-bee. They seem to look on it as an easy get-rich-quick proposition—that the bees board themselves and work for nothing, and they are to take in the proceeds thereof; then if their expectation is not fulfilled they are quite apt to condemn the business because this class of people have failed at it. On the other hand, investigation shows that the man and not the bees was at fault. Many who become interested as queen-breeders, either as a fad or for profit, do so with a very faint idea of what is required to reach the point at which

they are aiming. The greatest stumbling-block is their lack of knowledge of the principles of queen-breeding.

This need not be the case, because we can all learn; but the trouble with many lies in their unwillingness to learn. I know people who take the bee-journals but never read them. I also know others who keep bees and will not take a bee journal. They either ridicule the idea of any special study being required, or they are too tired mentally to become sufficiently interested. History repeats itself again, and another man goes out of the bee business.

The fact of the matter is, the bee business is a full-fledged one, worthy of the talent and time of our best men and women, both of whom must have a certain degree of intelligence and business judgment, and, unfortunately, there are many people who get into the bee business who do not fit this description; and, in short, the bee-keeping fraternity asked what made them go out. If every one who goes into the bee business were successful it would be utterly impossible for the business to have reached its present magnitude. Make up your mind what your circumstances will permit you to do, and live up to your determination at any cost. Your will power depends upon it.

Thousands of little bee-plants and a few big ones sprang up with the green of last spring; and thousands of little bee-plants and a few big ones will go down with that same green, under the frost and snow and ice this winter. Whether your little enterprise will hardly survive the gray cold winter, and be ready and eager to flourish again in the spring, or be steeped in destitution, and be set down as a failure, remains entirely with you. Why not obey conscience and tell the truth? The old adage, "There is no royal road to success," applies to the bee business just as well as to other vocations in life.

Matanzas, Cuba.

HOFFMAN-FRAME DISCUSSION REVIEWED AGAIN.

Early vs. the New Form of Construction.

BY DR. C. C. MILLER.

I think the reading of GLEANINGS, for Oct. 1, 1904, has made me more charitable in my views. That symposium on Hoffman frames shows that men whom I have reason to esteem as good square men may hold as their honest convictions opinions diametrically opposed. The difference in belief may come from difference in conditions, and it may come from difference in management. As to conditions, the presence or absence of propolis has an important bearing, and so, possibly, may other conditions. As to management, J. A. Green emphasizes the point that *squeezing the frames together* is a matter of first importance; and the man who fails in doing this every time after having taken out frames fails in the proper man-

agement of Hoffman frames, unless propolis is entirely out of the case.

It may be a fair question to ask whether all taking part in the discussion are talking about the same thing, for there are Hoffman frames and Hoffman frames. As first made—and I plume myself just a little on the times I didn't say unpleasant words when handling them—the top-bar for three inches of its length at each end was $1\frac{1}{8}$ inches wide. Figuring up the surface of contact of each top-bar at the four places where it joined its neighbor made several square inches, and at each end was the $1\frac{1}{8}$ inches where the end of the top-bar was glued to the end-wall of the hive. The wide ends of the top-bar were then cut down to the same width as the central part of the bar, and that was a big improvement. Then the ends were cut off so there was a bee-space between the end of the top-bar and the hive-wall. That leaves the Hoffman frame of to-day, if I am not mistaken, with no impinging surface except the $\frac{1}{4}$ -inch thickness of each end bar for $2\frac{3}{4}$ inches of its length at its upper part, a total surface of only $2\frac{3}{4}$ square inches to give a chance for mashing bees or admitting propolis. I don't know just how much of surface there was in the original Hoffman, but I think it was three or four times as much. Every particle that was cut away of the original impinging surface was an improvement, and it may not be out of order to inquire whether the improvement can not be carried still further. Instead of having those shoulders $2\frac{3}{4}$ inches long on the end-bars touching their whole length, suppose the middle part be cut away, leaving $\frac{3}{4}$ inch at the upper end and $\frac{1}{2}$ inch at the lower part. That would space the frames just the same, and give the bees a chance for only half the gluing.

Views conflict as to the V edge. For those who take Mr. Green's advice (squeezing the frames close together) the V edge ought to be a good thing. For those who leave the frames loose, it is bad; for the bees will put more glue into the angle made by the V edge than they will on two square surfaces meeting.

The objection that, with the V edge, the end-bars will slide by each other is hardly a valid one. To allow such a thing there must be at least $\frac{1}{8}$ -inch play endwise *unless* two V edges come together—a thing that can never happen if the frames are rightly put together, although it may easily happen if they are made wrong. Ought not instructions for putting together appear in the catalogs? Mr. Green says, page 931, "The Hoffman frame should be nailed up so that one V edge is on each side of the frame." Right, so far as it goes; yet that may allow two V's to come together, for it will allow two different kinds of frames. Perhaps this instruction might answer: Make your frames with a V edge on each side of the frame, in such a way that, when the frame is held up before you by both hands, the V edge shall be toward you at the left and from you at the right.

The symposium loses a large part of its value because of the fact that it is limited to a comparison of the Hoffman with the loose thin-top Langstroth frame. That leaves it still an open question, so far as the symposium is concerned, whether some one of the several other frames might not be preferred to the Hoffman, at least by some of the writers.

There is more than one frame in existence which possesses all the advantages that I remember to have seen claimed for the Hoffman, without the objections that there are in the minds of some against them. It might make interesting reading to have a similar discussion without having it so limited in its scope.

Marengo, Ill.

Mr. J. A. Green suggests using a spring similar to that used in comb-honey supers, but stiffer. Those who have used square edges, and prefer them, probably are careful about squeezing the end-bars together.

You say there is more than one frame in existence which possesses all the advantages that you remember to have seen claimed for the Hoffman, without the objections. You possibly have in mind as an example the Miller nail-spaced frame, or some of the staple-spaced put out by some of the manufacturers. A serious and almost fatal objection to *any* form of metal spacing is the care that must be exercised in uncapping, and the consequent danger of dulling the keen edge of the knife. We are anxious to know about those frames that



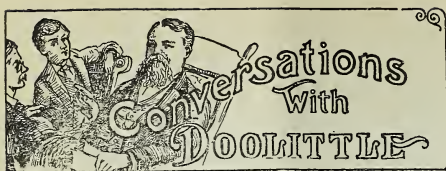
THE A. I. ROOT COMPANY'S BEE-CELLAR UNDER THE MACHINE-SHOP. SEE EDITORIAL.

[Your scheme of having the length of the contact edges of the end-bars of Hoffman frames reduced would work beautifully for only a short time. It would weaken the projecting edges so that they would split off worse than they do now when propolis is bad.

Regarding the question of square vs. V edges, I am satisfied that, after reading all the pros and cons, the V edge ordinarily should not be dispensed with, by the beginner at least. I tried both forms very thoroughly years ago—first the square and then the V. I finally came to the conclusion that Mr. Hoffman was right—that the V was better. If a square edge is used, frames *must* in every case be crowded *tightly together*; and I am of the opinion that some form of compression should be used also.

have "*all* the advantages" of the Hoffman "*without* the objections." I can't help thinking you are mistaken as to the existence of such frames. To say that you are a comb-honey man, and therefore do not have to bother with an uncapping-knife on your nail-spaced frame, does not remove the objection to the three-fourths that produce exclusively extracted or both comb and extracted.

The instructions for putting the Hoffman frames together are printed in the form of a pamphlet, and sent out with each bunch of frames. We used to have instructions incorporated in our catalog; but that space had come to be so valuable that we were obliged to leave out all directions for nailing up stuff. —Ed.]



AFTER-SWARMS—CAN THEY BE PREVENTED?

"Say, Doolittle, I want to know something about after-swarming. Can I have a talk with you on this matter?"

"Yes. But, Brown, after-swarms do not issue during the months of February and March, in this locality."

"I know this talk will be a little out of season in that respect; but it will be right in season to such as I who wish to prepare hives for increase, during the time the snow is on the ground, when work at farming is having its slack season."

"Yes, that is true. But you wish increase, do you not?"

"I am always pleased with the first (or prime) swarm; but the after-swarming is often so long-drawn-out that it becomes a nuisance; yet so far such swarms are something that I have been unable to dispense with, so I want you to tell me, if you can, some method for stopping them. At least, tell me something about them so that I can know more of this matter than I now do."

"There have been various methods given for the prevention of after-swarms, such as removing the old colony to a new stand as soon as the prime swarm has left it, setting the hive containing this new or prime swarm on the stand it previously occupied; cutting out all the queen-cells but one on the sixth day after swarming, and hiving the after-swarm in a box on top of the old hive till the next morning after they came out, when they are to be shaken out of the box in front of the old hive, and allowed to run in so that the young queens will, all but one, be destroyed. All of the above plans have their various advocates, who think them superior to anything else, and in the hands of experienced bee-keepers the most of them have more or less value in them."

"Have you tried these plans?"

"Yes, I have tried every plan of which I have ever read."

"Don't you find some superior to others?"

"Yes; and out of all the plans given, I have selected two as being the 'cream' of the whole, using them for nearly or quite a score of years with perfect success."

"That sounds something like it. Would you object to telling me so I can use them?"

"No. I use them in accordance with what I wish to do with the old colony of bees. Where I wish to remove the old hive to a new stand, while the swarm is in the air, hiving the prime swarm on the old stand, I proceed as follows: As soon as a swarm is seen issuing from any hive I get another hive, which has been previously prepared, having the desired number of frames in it,

taking it to the hive from which the swarm came."

"Excuse my breaking in. But do you use empty frames?"

"Not generally. I prefer frames filled with foundation for this, or, better still, frames filled with empty combs."

"Thank you for explaining this. I shall have to use foundation. But go on; you had the hive of frames at the hive casting the prime swarm."

"These frames are now taken from this hive and set near the other, when I open the hive and take out the frames of brood, putting them in the hive I have just emptied. If these combs of brood have many bees on them, and the weather is warm, I shake a part of the bees off in front of the hive as they are lifted from their place preparatory to placing them in the hive I brought with me after which each comb is set in the new hive. If few bees, or the weather is cool, no bees are shaken off. Having these combs of brood in the new hive, the same is set a rod or two away."

"Why do you set it thus?"

"So that the returning swarm may not find it; for should they do this they might be inclined to go on this brood instead of going into the hive we wish them in."

"I see."

"I now put the frames brought with me into the hive I took the brood from, and rearrange it, by which time the swarm will be returning, if the queen has a clipped wing, as all queens should have where natural swarming is practiced. If the queen is not clipped, then the swarm is hived in this prepared hive on the old stand, the same as any swarm is hived."

"What do you do with the combs of brood and bees set a rod or two away?"

"I set these on a stand where I wish a colony to stay, and adjust the entrance to suit their wants, when they are left till the next morning."

"Give me the reason for this."

"By this time nearly, if not quite, all of the old or field bees which stayed on the combs have gone back with the swarm, or to their old location, so that the young bees which remain are ready to accept any queen or queen-cell that I may give them."

"Ah! I see."

"I now go to some nuclei which I may have, and take their queen, if I wish the colony to have a laying queen; or to the queen-nursery and get a virgin; or, if I have neither, I get a ripe queen-cell and give to them."

"Don't you use any precaution in introducing where you give a queen?"

"I introduce as follows: Upon opening the hive I take out one of the central combs, holding the same up before me. As the bees are all young, they will at once take to filling themselves with honey; and while they are so doing I let the queen run on the comb where there are a few cells of honey not occupied with other bees eating out of them, when the queen will commence to fill

herself also, I holding the cage over her till she begins to feed, as she otherwise might fly away. The frame is now lowered into the hive, and the same closed. In this way the bees and queen appear natural, and I have yet to lose the first queen put in under such circumstances."

"Don't you cut the queen-cells off from the combs—those that were on when the colony or swarm went from them?"

"No. The colony is so reduced in all old bees that, as soon as they find they have a queen, the bees proceed at once to destroy all queen-cells, so that no after-swarms ever issue—at least, an experience covering a score of years says that none do with me."

"Well, that is good proof. But you spoke of another plan. Perhaps I might hear that."

"This is equally successful with the one I have just given, but is used only where I wish to treat swarms in the old way, that of hiving the prime swarm on a new stand, as our fathers did. When such is the case, as soon as the swarm is hived I go to the old hive from which it came, and mark on it with a pencil, 'Sw'd, 6-20,' which tells me at a glance that a swarm came from that hive June 20, should that be the date on which the swarm issued, and the one which was marked on the hive. If it should be another day, the date is different; but the plan is the same, and suited to any day on which a prime swarm issues."

"How does this help you?"

"This helps me to know when a young queen is likely to emerge from her cell, and on the evening of the eighth day from the date on the hive I listen a minute or two, by placing my ear against the side of the hive; and if swarming has been done 'according to rule' I hear a young queen piping, and by this I know that a young queen is at liberty in the hive, and that an after-swarm may be expected the next day."

"Suppose you hear no piping. Is that an evidence that no swarm is to come from that hive?"

"No; but where no piping is heard on the night of the eighth day I do not listen again till the evening of the thirteenth day; for the next rule is, that the colony swarmed upon an egg or small larva being in the queen-cell, which allows the young queen to emerge from the twelfth to the sixteenth day after the prime swarm came. If no piping is heard by the evening of the seventeenth day, no swarm need be expected."

"I am glad to learn this, for I knew very little in this matter before. But what do you do when you hear piping?"

"When it is heard, which it will be nine cases out of ten on the eighth day, if the colony is to cast an after-swarm I go early the next morning, and take every frame out of the hive, and shake the bees off each (in front of the entrance) as I am returning them, so I shall be perfectly sure not to miss a single queen-cell, but cut all off; for by this piping we know that there is a queen at liberty in the hive, so we need to leave

none. Yea, if we do leave any we know it means a swarm, as soon as the cell left becomes ripe."

"Then you think that these two plans will work every time, do you?"

"My experience tells me that these are sure of accomplishing just what we desire, under all circumstances which may arise; or they are plans which we can 'tie to,' as the expression goes."



HOW TO FEED IN THE SPRING; HOW TO MAKE ROCK CANDY FOR THE PURPOSE.

On page 16 Doolittle says, "For feeding at this time (spring) I prefer combs of sealed honey set in next to the cluster. If none such can be had we must feed sugar syrup or liquid honey if we have it; but the latter tends to promote excessive robbing."

This being the time of year when beginners wish to know about the best way to feed stocks that are short of stores I will, with all due deference to Mr. Doolittle's extensive knowledge and experience, give my way, which I believe, all things considered, is far superior to the one given above. I put pulverized sugar into a large dish or pan; add warm extracted honey, sufficient to make a stiff dough of about three or four pounds when thoroughly worked, so that it will not run when warmed by the cluster of bees. Flatten it out to about an inch thick; place it on top of the frames over the cluster, with a cloth over the top; put on the super, and pack with anything that will prevent the heat of the cluster escaping. Repeat whenever necessary until honey comes from the fields.

Thus fed they will use it as needed, and keep up brood-rearing at a rapid rate and "niver a bit" of robbing.

Udell, Iowa.

G. B. REPLOGLE

[The ordinary pulverized sugar in honey mixed into a stiff dough makes a very excellent bee candy for cold-weather or spring feeding. But one objection to this kind of feed is that the granules will sometimes rattle down on the bottom-board, and be carried out and wasted. The candy that we prefer is made by mixing sugar and a little water and a little honey, and boiling long enough so when cold it will form a translucent block of rock candy. Do not stir, as that makes it somewhat mealy or grainy, and the result is the bees will cause the granules to drop down and so be wasted. The honey is necessary to prevent graining. It may be a little sticky, but it should be wrapped in paraffine paper, and then when ready for use the paper should be peeled off

on one side and placed on top of the brood-frames. Our experience in giving liquid feed in cold weather is not favorable. We always use combs of sealed stores first; then, if we have not the combs, candy.—ED.]

IDAHO BEE-KEEPERS; FOUL-BROOD LEGISLATION.

We have before the legislature a bee-disease bill combining the best features of the county-inspector systems of California and Utah. Foul brood is spreading rapidly, threatening all alike, so we want you to write your Representative and your Senator, indorsing this measure and asking his support for it. Then write me a ringing letter in a few words, indorsing our efforts to secure such a law. These letters will be presented to the legislature. Then get up a petition for such a law, with as many signatures of bee-owners as possible, and send it to me. All this will take but little time, but may save the bee-owners thousands of dollars, if we secure such a law. We must act at once.

E. F. ATWATER, Pres.

South Idaho and Eastern Oregon Ass'n.
Box 37, Meridian, Ida.

HUMIDITY AND TEMPERATURE, AND THEIR RELATION TO HONEY-FLOWS IN HOT CLIMATES.

I should like to know if there is any material difference in the honey-flow where the thermometer ranges from 110 to 120°, with a dry atmosphere, such as we have in the Imperial Valley. My bees did not make much honey here through May and June; but through July and August they did very well. The thermometer during the former months ranged from 100 to 120, with a dry atmosphere, and through the latter it ranged from 100 to 110, with a humid atmosphere. Owing to our proximity to the Salt River Valley, the climatic conditions ought to be nearly the same, and perhaps some one in Arizona can answer the question. Most of the honey here comes from alfalfa. When does the swarming season commence in the Salt River Valley, and how long does it last?

Brawley, Cal.

S. D. ULREY.

[When in Arizona some few years ago I remembered hearing Mr. Wm. Rohrig discuss this very question, and I therefore turned this letter over to him for reply, and here it is.—ED.]

Before attempting to answer Mr. Ulrey it will be only fair to say that I have had no experience where the temperature ranged as high as 120 degrees; but for practical purposes in honey-gathering there may be but little difference between that and our temperature of 100 to 112 degrees.

After an experience of 14 years in this climate, where the atmosphere is very dry for days and even weeks at a time, I am forced to the conclusion that dry hot days are not at all times detrimental to the hon-

ey-flow, and I dare say perhaps never are when other conditions are right; for during the period of extreme heat we have had very good honey-flows, the bees doing good work before 10 A. M. and after 4 P. M., while doing but little during the middle of the day.

I can not believe that the dry or more humid conditions of the atmosphere were alone responsible for Mr. Ulrey's experience. There are, I believe, atmospheric conditions that are not conducive to nectar secretion, but just what these conditions are I am not prepared to say. There are times when we have apparently ideal weather and abundance of bloom, and our bees largely remain at home, and but little honey is stored. This is equally true when the atmosphere is dry or more humid.

Here in the Salt River Valley, June is usually the best month we have for a honey-flow from alfalfa, and it is invariably a very dry month.

I am not sure just what the necessary conditions are; but I would be willing to take my chances of securing a crop of honey, if we had plenty of irrigating water, during spring and early summer, and alfalfa within range be permitted to bloom before cutting. The swarming season here is during April and May.

WM. ROHRIG.

Tempe, Arizona, Jan. 3.

WINTER FLIGHTS.

I have been much interested in the arguments for winter flights of bees that have been placed in cellars. I am only a beginner in this, and perhaps should remain in the background and let the older and more experienced bee-keepers decide; but on page 12, replying to a Straw by Dr. Miller, you say you would like to know how the midwinter flights work in other localities, so I am writing my experience of the last year.

My cellar has to be kept as cold as possible, and not freeze—about 34 on the average, on account of keeping fruit well, so bees have to stand the cold. About the middle of February I noticed my bees were getting a little uneasy; and so on the first bright warm day I placed one hive in my shed doorway in the sun. Why, you would have thought it was swarming time, they poured out so; and after having a good cleansing flight they began to carry out dead bees. I watched them quite closely for two hours, when they had nearly all returned to the hive. I saw only a very few live bees drop on the snow and fail to rise again. After all had returned I carried the hive back into the cellar, and they were as quiet as could be until I placed them on summer stand. There was, as Mr. Quinn says, page 83, a lot of bees, come from my other hives, dead on the cellar floor. I believe bees wintered in cellars need a winter flight, particularly if cellars are as cold as mine has to be, for they have to eat more to keep up their bodily temperature. I shall give all of my bees a flight, if possible, the last of February.

Augusta, Me., Jan. 23. JOHN JACKSON.



He was wounded for our transgressions, he was bruised for our iniquities.—ISA. 53:5.

A few times in my life I have met with people, or have read articles from people, who rejected the atonement. I remember that one man said it was a great blunder—there was no justice in it; there was no good common sense in punishing one man for offenses committed by another. It only made me think that great truths stand out all the stronger for having sharp contrasts. Sometimes a good man is all at once assailed by scandal; and this very thing sets people at work to look up his good qualities, and the result has many times been that the man was thought the more of, and held in higher estimation, because his good life-record had been assailed. In the same way I think I have got a new view or a better view of the atonement because of what skeptics and unbelievers have said against it. Now, I am not going to explain, or perhaps I might say *try* to explain, how it is that Jesus could suffer and die in order that we might live and enjoy life in its truest and highest sense. I am not a theologian; but nevertheless I may give you some help in trying to grasp this wonderful thought of the way in which God saw fit to express his love for sinful humanity.

A few days ago a little tract came floating through the mails. I do not know who sent it. A great many come that I never find time to read through; but now and then I strike a little gem that I would not have missed for any thing. The one I am going to quote from says, "Bible and Tract Repository, Chicago."

When I was a boy at school, I saw a sight I never can forget—a man tied to a cart and dragged, before the people's eyes, through the streets of my native town, his back torn and bleeding from the lash. It was a painful punishment. For *many* offenses? No; for one offense. Did any of the townsmen offer to divide the lashes with him? No, he who committed the offense bore the penalty all alone. It was the penalty of a changing human law, for it was the last instance of its infliction.

I suppose the above took place in Scotland. You may be aware that it was customary in the Old World to punish people terribly for what we now call minor offenses. In England, for many years men were put in jail for debt; and, if I am correct, men were hanged on the gallows for burglary and stealing. Those old severe laws have passed away or been modified. Perhaps the tendency in the United States is just now to make it *too* easy for transgressors because they are given too light a punishment or none at all. The world could hardly get along without penalties of some kind for transgressing our laws; but these penalties should be commensurate to the crime committed. The laws should be framed by our wisest and best men; and I believe the purpose of *all* law and penalty is to lessen

crime. We have been taught repeatedly by history that, when punishment is too severe, away beyond what is reasonable, it seems to defeat the purpose for what it was intended to do. When our people burned and drowned witches to do away with witchcraft, it not only failed in its object, but some of the leaders were appalled by the apparent fact that it made matters *worse*. People confessed to being guilty of witchcraft when they were entirely innocent. The lynching business that has threatened to spread over our land seems in a like manner to make things *worse* instead of better. A certain class of people seem to have almost a mania for committing the very crimes for which others have been so severely and terribly punished. I hope our country is learning that capital punishment, to have the desired effect, or to do any good at all, must be administered by law, and directed by comparatively slow, deliberate reason and common sense. Let us now go back to my little quotation from the tract.

If such a punishment as is described there were undertaken now, in any community in the United States, there would be a revolt. The women (God bless them) would revolt and put a stop to such work, even if the men let it go on. If it really were strictly according to law I should expect that some good man, perhaps some of the sufferer's neighbors, would have volunteered to take a part of his punishment. In fact, I should be rather disappointed and ashamed of any community that could not furnish one or more who would volunteer to divide the punishment with him, especially if it was inflicted, as we are told, for only *one* offense. My good father used to tell me, even when I was a boy, that, if our laws were bad, or foolishly framed, the best way to get rid of them was to enforce them. Hold fast to law, no matter what happens. If the law is a bad one, have it enforced and then take the proper steps to have it repealed or changed. In this case, even if it is true that no fellow-townsmen offered to help him bear the penalty, it is also true that the feelings of the people revolted to such an extent from such a spectacle that the law was changed from that time forward. This man suffered terribly for his sin and perhaps trifling transgression; but his suffering was the means of relieving all mankind through the great future from a similar punishment. He was in one sense a martyr. We are not told how he bore the punishment, but the little sketch gives us a faint glimpse of the way in which the dear Savior *suffered* that we might *live*.

There is an old hymn my father used to sing when he was busy at his carpenter work. I wonder if it ever occurred to him that his occupation was the same as that of the dear Savior when here on earth. I distinctly remember one stanza of that old hymn:

Was it for crimes that I had done
He groaned upon the tree?
Amazing pity! grace unknown!
And love beyond degree.

In the little sketch the man was guilty of one offense, and he suffered an unreasonable penalty, that those coming after him might none of them suffer the same. Our Savior suffered in the same way, but he was entirely innocent—the only spotless character, so far as sin or crime was concerned, the world has ever known. Let me quote from my little tract once more.

When I was a student at the university, I saw another sight I never can forget—a man brought out to die. His arms were pinioned, his face already pale as death—thousands of eager eyes were on him as he came up from the jail in sight. Did any man ask to die in his room? Did any friend come and loose the rope, and say, "Put it around my neck, I die instead"? No; he underwent the sentence of the law. For many offenses? No; for one offense. He had stolen a money parcel from a stage-coach. He broke the law at one point, and died for it. It was the penalty of a changing human law in this case also; it was the last instance of capital punishment being inflicted for that offense.

You see this was at a time when hanging was the penalty for theft. This man, for the first and perhaps the only time in his life, stole a parcel of money; and in this case also, community at large decided that there was no sense in taking a man's life for stealing a little money. Dear me! what a lot of hanging we should have just now if every man were put to death who takes money (millionaires and all) that does not belong to him!

Years ago when lynching was common for stealing horses and cattle on the plains of the great West, we are told that a good Christian man came on a crowd of cowboys about to hang a man on the limb of a tree, for stealing cattle. This Christian man protested with all his eloquence, but they laughed him to scorn; and finally one of the boldest threatened his life also if he did not stand out of the way, and let them proceed to "business." *Business* indeed! But this Christian man was no coward. He walked up to the man who had a rope around his neck, and said something like this:

"All right, friends. If you will persist in taking this man's life for a minor offense, or, very likely, no offense at all, for I fully believe the man *may be* innocent of the charge you are making against him, you may string me up at the same time."

Then placing his back against the back of the culprit he quickly slipped the noose large enough to put it around his own neck and that of the culprit, and bade them go on and pull up the rope if they wanted to. One of the boldest, and perhaps the most wicked—a criminal himself, no doubt—said, "All right, boys, let's have a double hanging. It will be more fun to hang two men than one. Get hold of the rope, and up they go." For a time it seemed as if this would be the outcome. But when the boys thought of the idea of hanging one innocent man just because he preferred death rather than to see a fellow-being put to death, it was too much for them. It appealed to their better natures. The rope was taken off, and the cattle-thief was allowed to go before the proper authorities and be tried according to law. Is there one among my readers who

has not been stirred by a sort of enthusiasm for the man who is bold enough and brave enough to go to such a length in protecting a fellow-being, and one who was an utter stranger?

Let me now take one more illustration from that little tract:

I saw another sight—it matters not when—myself a sinner, standing on the brink of ruin, deserving naught but hell. For one sin? No; for many, many sins, committed against the unchanging laws of God. But again I looked and saw Jesus, my substitute, scourged in my stead, and dying on the cross for me. I looked and wept, and was forgiven. And it seemed to me to be my duty to write this, to tell you of that Savior, to see if you will not also "look and live."

The above incident took a mighty hold on me when I read it, for it was my experience exactly. Yes, dear reader, it was your old friend A. I. Root who, something like forty years ago, was himself a helpless sinner standing on the brink of ruin. I was loaded down with Satan's chains. I had striven in vain to break the shackles that held me down, but I was helpless and discouraged—not for one sin, but for many. Like the writer of the little tract, in my desperation and utter helplessness I turned to Jesus. I had heard sermons almost without number, but I did not understand that Jesus could take my place. I did not comprehend that he could take the cruel rope from my own neck and put it around his also. I had supposed, in my want of faith, that I would have to carry the iron chains and the shackles by my own strength. And is it any thing strange, friends, that, when he took me and all my burdens, and bade me "go in peace and sin no more," it is my pleasure, even though toward forty years have passed, to continue to tell that old, old story to my friends and neighbors?

I will now give you the rest of the little tract:

And how simple it all becomes when God opens the eye! A friend who lately came from Paris told me of an English groom there, a very careless old man, who had during a severe illness been made to feel that he was a sinner. He dared not die as he was. The clergyman whom he sent for got tired of visiting him, having told him all he himself then knew of the way of salvation. But one Sunday afternoon the groom's daughter waited in the vestry after church, saying, "You must come once more, sir. I can not see my father again without you." "I can tell him nothing new," said the preacher; "but I may take the sermon I have been preaching, and read it to him." The dying man lay as before in anguish, thinking of his sins, and whither they must carry him. "My friend, I have come to read to you the sermon I have just preached. First, I shall tell you the text, he was wounded for our transgressions. Now I shall read." "Hold!" said the dying man; "I have it! read no more, he was wounded for my transgressions." Soon after, he died rejoicing in Christ his righteousness.

When I read the story, I remembered Archimedes running through the streets of Syracuse straight from the bath where he had found out, in bathing, the secret of testing whether the king's crown had or had not been alloyed by the goldsmith in making it. And as he ran he cried, "I have found it! I have found it!"

Poor philosopher, you have found out only a new principle in science. Happy groom, you have found in Jesus Christ a savior for your precious soul.

The clergyman himself who visited the dying groom was thus awakened and found Christ.

SIR JAMES SIMPSON, Edinburgh, Scotland.

Verily, verily, I say unto you, He that heareth my word, and believeth on him that sent me, hath everlasting life, and shall not come into condemnation; but is passed from death unto life.—JOHN 5:24.

THE MOST IMPORTANT THING IN THE WORLD.

There have been some jokes at my expense, and quite a little bantering, because I am so anxious to see men and women get married and start a home as soon as they are of suitable age; and I have felt sad, also, to see so many childless homes, or homes where one child was brought up alone. Well, I have recently received some most emphatic indorsement of my "peculiar" ideas, and from a source, too, that comes pretty near being as good authority as we have. The following is clipped from the *Independent* of Feb. 2:

At the Inter-church Conference on Marriage and Divorce, in Washington last week, the resolution of the American Bar Association concerning the unification of State laws for the regulation of divorce was approved, with the exception that the paragraph relating to the marriage of divorced persons was so amended as to permit, after one year, the remarriage of only the innocent party. A large committee or delegation led by Bishop William C. Doane, of the Episcopal diocese of Albany, called upon the President at the White House to confer with him as to the results of their deliberations. In a brief address Mr. Roosevelt said:

WHAT THE PRESIDENT THINKS OF THE DIVORCE BUSINESS.

"There is a certain tendency to exalt the unessential in dealing with our public questions, and public men especially are apt to get their attention concentrated on questions that have an importance, but a wholly ephemeral importance, compared with the questions that go straight to the root of things. Questions like the tariff and the currency are of literally no consequence whatsoever compared with the vital question of having the unit of our social life, the home, preserved.

"It is impossible to overstate the importance of the cause you represent. If the average husband and wife fulfill their duties toward one another and toward their children as Christianity teaches them, then we may rest absolutely assured that the other problems will solve themselves. But if we have solved every other problem in the wisest possible way, it shall profit us nothing if we have lost our national soul; and we will have lost it if we do not have the question of the relations of the family put on the proper basis.

"While I do not know exactly what it is that you wish me to do, I can say in advance that so far as in me lies all will be done to co-operate with you toward the end you have in view. One of the most unpleasant and dangerous features of our American life is the diminishing birth rate and the loosening of the marital tie among the old native American families. It goes without saying, that, for the race as for the individual, no material prosperity, no business growth, no artistic or scientific development will count if the race commits suicide. Therefore I count myself fortunate in having the chance to work with you in this matter of vital importance to the national welfare."

I wish to repeat one or two sentences in the above. First:

"Questions like the tariff and the currency are of literally no consequence whatsoever compared with the vital question of having the unit of our social life, the home, preserved."

Again:

"If the average husband and wife fulfill their duties toward one another and toward their children as *Christianity teaches them*, then we may rest absolutely assured that the other problems will solve themselves."

What an indorsement of the Christian religion! And are we as a people up to that point in faith where we can *believe* that the other problems will solve themselves?

Once more:

"It goes without saying, that, for the race as for the individual, no material prosperity, no business growth, no artistic or

scientific development, will count if the race commits suicide."

There you have it, friends. "It shall profit us nothing if we have lost our national soul." I feel sure that God's Spirit prompted our beloved President to utter these words. My heart warms toward him in a way it has never done before.

And now may I be permitted to say to the unmarried men who read GLEANINGS that a solemn and sacred responsibility rests upon them? You are not fulfilling the duty you owe to God and humanity if you remain single. But before you get married, remember it is the most solemn and sacred relation ever assumed by any human being; and when you do marry, let it be for life. Take the dear companion God gives you for better or for worse; and if your faith is in the Lord Jesus Christ it will surely be for better. Especially is it important that all good men shall be married men, and bring up children in the fear of the Lord—children that will surely help to rescue our nation from the many evils that threaten it.

DOES RADIUM STILL RADIATE?

One of our friends asks the above question, to which I answer, "Yes, sir." The blazing shooting stars are scintillating forth exactly as they did when I first got it. In order to test it again, last night I placed it by my bedside, and about 3 o'clock this morning I took a look at it. The scintillations flash out of the eye-piece so plainly they can be seen across the room; and on putting the eye down close to the instrument it seems like a veritable bombardment of fiery meteors. The effect is very much more satisfactory at night. In winter, when the ground is covered with snow, in consequence of the bright light the pupil of the human eye contracts to such an extent that it is very difficult to get a satisfactory view of the radium emanations by daylight, even if you stay several minutes in a darkened closet. In the evening it is very much better, but still more satisfactory when you wake up at night. So far as I can learn from our scientific periodicals, there has as yet been no satisfactory explanation offered for this wonderful phenomenon. Let me explain a little. This bromide of radium is, I conjecture, dissolved in a very little water, or mixed so as to be something like whitewash. Then a very little bit of this whitewash—about what you could pick up on the point of a needle, is dropped on a little piece of metal just about like the hour-hand of a watch. It takes a magnifying-glass, in fact, to get just a glimpse of this little white speck where the radium solution has been dropped and allowed to dry on; but from this little microscopic speck of radium this wonderful radio-activity pours forth day and night, winter and summer, in an unceasing stream of fiery meteors, and yet the little speck is never consumed, and the supply never gives out. It continues un-

ceasingly to shoot out into space heat, light, and power. I am told by the *Scientific American* that a radium clock is already running that will probably run until the mechanism wears out.

OUR POLITICAL BOSSES.

GLEANINGS seldom touches on politics; in fact, I am not a politician; but just now the State of Ohio is entering on a conflict that ought to interest every State of the Union, especially as in most States there is the same or a similar state of affairs. Our political bosses declare that Governor Herrick shall serve another term, no matter what the churches, temperance people, college professors, and those who have charge of our schools have to say in regard to the matter. For some time we have seen statements in our papers to the effect that "Boss Cox" would probably settle the matter when he got ready to do so. Several times I questioned the above, but have been told by men who ought to know that Cox is a very careful man, and what he *says* almost invariably comes to pass. Well, just recently Cox has made a decision in the following words, which I take from the *American Issue*:

It was my intention not to commit myself on this subject until my return from my vacation; but taking into consideration the fact that my position may be misconstrued I have concluded to make this statement now. I think Gov. Herrick is entitled to the support of all good Republicans. He shall have *mine*.

Now, the question naturally arises, "Who is Boss Cox, any way, that he should decide matters of such moment?" Most residents of Ohio know pretty well who and what Cox is, without explanation; but for the benefit of some who do not, I make another extract from the *American Issue* which will explain somewhat. Read the following:

His admiring friend, Gustav J. Kargar, certifies us in his admirable monograph in Leslie's *Monthly* for January, 1904, entitled, "George Barnsdale Cox, Proprietor of Cincinnati," as follows:

"Every night he may be found at Weilert's resort, in the beer-garden if the weather permits, in the beer-hall if inclement. He often drinks from twenty to thirty glasses at a sitting."

There you have it, friends. The man who decides for the rest of us who shall be our future Governor often drinks from twenty to thirty glasses of beer at a sitting in one of Cincinnati's famous beer-gardens. Our churches, our ministers, our educators, temperance people and temperance workers, including the mothers of our land, are now expected to kneel, and bow themselves down in the dust, while this man Cox, this agent of the brewers, this man who drinks to the

extent mentioned above, coolly and calmly walks over us. Will the State of Ohio put up with this thing longer? If it is going to wake up our good people and *bring them to life*, there may be a providence in it. God forbid that such a state of affairs should exist any longer. If nothing but a civil war can free our State from this bondage and thralldom to the liquor interests, then let us have war. May God be praised, however, that an awakening and a scratching of names at the ballot-box may take the place of war.

THE "SIMPLE LIFE."

Dear Friend Root:—I have never yet come to the place where I did not consider the expense of an article before purchasing. Not many years ago when I visited the West I went into the dining-car to get my dinner. I ordered a piece of chicken-pie, baked potatoes, and a cup of coffee. Then, as you know, bread and butter, sauce, and pickles are always thrown in, and for which I paid 40 cts. How much more would one wish to make out a good square meal when real hungry? The gentleman who sat opposite me at the table paid \$2.00. He did not eat one-fourth of what he ordered, and I doubt if he felt any better satisfied than I did. I think I heartily agree with you that this is not only foolish but wicked.

Savannah, Ohio.

W. C. GAULT.

Friend G., I have so often had almost exactly the same experience in dining-cars that I begin to think it is the rule rather than the exception to pay for a great lot the diner does not want and can not use. Perhaps some who read these pages may consider you and me penurious, and say we make a fuss about trifles; but the thought of so many people in so many parts of the earth who are actually suffering for nourishing food is constantly before me. While on this subject I wish to mention another thing that I omitted in my former talk. People all around me, and I rather suspect all over the world, are constantly purchasing things that are soon to be laid aside, and are only rubbish in the way. Of course, you can make a sale or advertise things you do not want; but a great many do not wish to go to the trouble of doing this. It is a little out of fashion with many to "dicker" or barter. Well, in view of this I am of late very careful about purchasing things. I say to myself, "Now, old fellow, do you really need this? and will you make some use of it right along?" Mrs. Root and I have talked the matter over; and when we get hold of something that pleases us, and is in constant use every day, we say to each other, "There! that investment is a good one. It has paid for itself already, and now I have learned how to use it I would not be without it."

Oh, yes! there is just one thing more I wish to say. Mrs. Root says that door that was put in last summer, making a short cut (see page 1029) from the kitchen to the pantry, is worth to her one thousand dollars—that is, she would not have the door taken out and go on with her old way of doing work for the sum of money mentioned. Now, friends, look over your home and see whether there is not a chance for you to make a "good investment" in the way of short cuts to save the dear wife or all the rest of you useless steps.

* Once more let me quote from the *American Issue*:

OFFICIALS RUINED BY STRONG DRINK.

In 1899 Thomas Jefferson made the following strong utterance on the liquor traffic: "The habit of using ardent spirits by men in public office has occasioned more injury to the public service and more trouble to me than any other circumstance which has occurred in the internal concerns of the country during my administration; and were I to commence my administration again with the knowledge which from experience I have acquired, the first question which I would ask with regard to every candidate for office should be, 'Is he addicted to the use of ardent spirits?'"